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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,882	04/15/2004	Kenneth A. Langland	290050.00020	7293
26710	7590	06/02/2005	EXAMINER	
QUARLES & BRADY LLP 411 E. WISCONSIN AVENUE SUITE 2040 MILWAUKEE, WI 53202-4497			KO, TONY	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/824,882

Applicant(s)

LANGLAND, KENNETH A.

Examiner

Tony Ko

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-17 and 19 is/are rejected.
- 7) ☒ Claim(s) 8, 9 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/15/04</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Claim Objections***

#### ***Claim Rejections - 35 USC § 112***

1. Claims 7 and 9 recites the limitation "the other one of the light detection area" in line 4. There is insufficient antecedent basis for this limitation in the claim.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 6, 7, 10, 12, 14, 15, 17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Klotz (U.S. Patent 6492775B2).
3. Regarding Claims 1, 2, 6, 7, 10, 12, 14, 15, 17 and 19, Klotz discloses (Figs. 1, 3 and 4) an object detection system comprising: a retroreflector (42); a emitter-detector assembly having a light emission area from which a light beam is emitted toward the retroreflector and having a light detection area in which light impinging thereon from the retroreflector produces an electrical signal, wherein the light emission area and the light detection area are concentric with one extending around the other (Fig. 4). Klotz also discloses the light emission area extends around the light detection area. That is, figure 4 shows light 64 projects light surrounding detector 75. Klotz also discloses the light detection area is substantially equal in size to the light emission area. Claims 7 and 19,

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as understood, is also anticipated by Klotz. Klotz also discloses the emitter-detector assembly further comprises a housing having an inner chamber in which one of the light detection area and the light emission area is located, and an annular outer chamber in which the other one of the light detection area and the light emission area is located. Klotz also discloses the light emission are comprises at least one light emitter selected from the group consisting of a light emitting diode, a laser, an incandescent bulb, a fluorescent bulb (64), a phosphorescent emitter, and an electroluminescent emitter. Klotz also discloses an emitter-detector assembly for object detection system having a retroreflector, the emitter-detector assembly comprising: a light emission section (64) comprising at least one emitter from which a light beam emanates in a first path; and a light detection section (75) which produces an electrical signal in response to light impinging thereon from the retroreflector, wherein the light emission section is concentric with the light detection section. Klotz also discloses the light detection section comprises a photodetector and the light emission section comprises a light emitter assembly extending around the photodetector (Fig. 4). Klotz also discloses the light detection section comprises a photodetector and the light emission section comprises a light emitter assembly extending around the photodetector. Klotz also discloses the light emission section comprises at least one light emitter selected from the group consisting of a light emitting diode, a laser, an incandescent bulb, a fluorescent bulb, a phosphorescent emitter, and an electroluminescent emitter. Klotz also discloses the light detection section is substantially equal in cross-sectional area to the light emission section.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 11, 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klotz.

6. Regarding claims 3 and 13, Klotz discloses the invention set forth above. Klotz does not disclose the light emission area comprises a plurality of light emitters located at different angles axially around the photodetector. It is well known to have a plurality of light emitters located at different angles around the photodetector instead of single light emitter. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have a plurality of light emitters located at different angles around the photodetector to improve reliability of the device.

7. Regarding claim 11 and 16, Klotz discloses the invention set forth above. Klotz does not disclose the light detection area comprises at least one device selected from the group consisting of a photodiode, a phototransistor, a thermopile, a solid state imager, a photomultiplier tube, and a pyroelectric detector. It is well known for a light detection area comprises at least one device selected from the group consisting of a photodiode, a phototransistor, a thermopile, a solid state imager, a photomultiplier tube, and a pyroelectric detector. It would have been obvious to a person of ordinary skill in

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the art at the time of the invention to have light detection area comprises at least one device selected from the group consisting of a photodiode, a phototransistor, a thermopile, a solid state imager, a photomultiplier tube, and a pyroelectric detector to detect incoming signal generated by the light source.

8. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klotz in view of Klotz (US 20030106991A1).

9. Regarding claims 4 and 5, Klotz disclose the invention set forth above. Klotz does not disclose the light detection area extends around the light emission area. Klotz (US 20030106991A1) discloses (Fig. 4) the light detection area extends around the light emission area. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have the light detection area extends around the light emission area to improve the signal detection accuracy by providing more detectors.

#### ***Allowable Subject Matter***

10. Claims 8, 9 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: Prior art disclose the invention set forth above. Prior art does not disclose the detection system having a quality factor Q that is greater than 0.25, where the quality factor is given by the expression  $Q = (R_s * S_{rf}) / (R_d * S_{rr} * G_{max})$  or  $Q = \text{Double Integral} [(Gr(x) * dS * dD / A_s * A_d)]$ .


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Ko whose telephone number is 571-272-1926. The examiner can normally be reached on Monday-Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TKO

  
**DAVID PORTA**  
**SUPERVISORY PATENT EXAMINER**  
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